Claims

What is claimed is:

1. An information display system for making a computer display objects including position information on an electronic map, said information display system comprising:

a database in which objects including position information and attribute information different from the position information are stored;

an electronic map storage section in which the electronic map is stored;

a set forming section which forms at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;

an arrangement for selecting the objects contained in each of the sets by locating position coordinates in the electronic map on which display is performed, displaying the selected objects according to the designated attributes of the selected objects while

assigning an indicating figure corresponding to the pair of the objects, and designating

position coordinates for the objects and the indicating figure to be displayed; and

an arrangement for placing the objects and the indicating figure on the electronic

map by using the designated position coordinates.

5   2. The information display system according to Claim 1, wherein said designation

method includes an arrangement for determining, by using the predetermined distance,

the size of the indicating figure as such a size that the objects to be displayed are

contained inside the area defined by the indicating figure, and an arrangement for

changing display parameters for the indicating figure by using a threshold value with

10   respect to a target attribute class.

3. The information display system according to Claim 1, wherein said designation

method includes an arrangement for determining the size of the indicating figure

according to the scale of the electronic map, and

said placement method locates the boundary of the indicating figure on the

15   electronic map and places a portion of the indicating figure contained in the electronic

map on which the display is performed.

4. A server used in an information display system for making a computer display objects including position information on an electronic map, said server being connected to a network, said server comprising:

a database in which objects including position information and attribute
5   information different from the position information are stored;

an electronic map storage section in which the electronic map is stored;

a search condition acquisition section which obtains conditions including a predetermined distance and designation of attribute information from a search query via the network, and making the server store the obtained conditions;

10   a set forming section which forms at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within the predetermined distance obtained from the search query;

an arrangement for selecting the objects contained in each of the sets by locating
15   position coordinates in the electronic map on which display is performed, displaying the selected objects according to the designated attributes of the selected objects while

assigning an indicating figure corresponding to the pair of the objects, and designating

position coordinates for the objects and the indicating figure to be displayed; and

an arrangement for generating search results including the position coordinates of

the objects and the indicating figure on the electronic map by using the designated

5   position coordinates.

5. The server according to Claim 4, further comprising an arrangement for

determining the size of the indicating figure as such a size that the objects to be displayed

are contained inside the area defined by the indicating figure, and an arrangement for

changing display parameters for the indicating figure by using a threshold value with

10   respect to a target attribute class.

6. The server according to Claim 4, further comprising an arrangement for

determining the size of the indicating figure according to the scale of the electronic map,

wherein said generation method locates the boundary of the indicating figure on

the electronic map and generates search results including a portion of the indicating figure

15   contained in the electronic map on which the display is performed.

7. The server according to Claim 4, further comprising an arrangement for receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the received objects in the database.

8. An information display method for making a computer display objects including position information on an electronic map, said method comprising:

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and a step of placing the objects and the indicating figure on the electronic map by using the designated position coordinates,

wherein said designation step includes a step of determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class.

9. The information display method according to Claim 8, wherein said designation step includes a step of determining the size of the indicating figure according to the scale of the electronic map, and

wherein said placement step includes locating the boundary of the indicating figure on the electronic map and placing a portion of the indicating figure contained in the electronic map on which the display is performed.

10. A server control method for making a server display objects including position information on an electronic map via a network, said method comprising:

a step of receiving a search query via the network, obtaining conditions including a predetermined distance and designation of attribute information from the search query, and making the server store the obtained conditions;

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including designated sorts of the attribute

5   information within the obtained predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an

10   indicating figure in an indicating form corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of generating search results including the placement of the objects and the indicating figure on the electronic map by using the designated position coordinates.

15   11. The server control method according to Claim 10, wherein said designation step includes a step of determining the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and

a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class.

12. The server control method according to Claim 10, wherein said designation step includes a step of determining the size of the indicating figure according to the scale of the electronic map, and wherein said generation step includes locating the boundary of the indicating figure on the electronic map and generating a portion of the indicating figure contained in the electronic map on which the display is performed.

13. The server control method according to Claim 10, further comprising a step of receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the received objects in the database.

14. A program for making a computer execute an information display method for displaying objects including position information on an electronic map, said program making the computer execute:

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a

set of objects by selecting the objects including a certain number of designated sorts of

the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map

storage section and on which display is performed, selecting the objects contained in each

5   of the sets by locating position coordinates in the electronic map, displaying the selected

objects according to the designated attributes of the selected objects while assigning an

indicating figure corresponding to the pair of the objects, and designating position

coordinates for the objects and the indicating figure to be displayed; and

a step of placing the objects and the indicating figure on the electronic map by

10   using the designated position coordinates,

wherein said designation step includes a step of determining, by using the

predetermined distance, the size of the indicating figure as such a size that the objects to

be displayed are contained inside the area defined by the indicating figure.

15. The program according to Claim 14, wherein said designation step includes a

15   step of determining the indicating figure according to the scale of the electronic map, and

a step of changing display parameters for the indicating figure by using a threshold value

with respect to a target attribute class, and wherein said placement step includes locating

the boundary of the indicating figure on the electronic map and placing on the electronic map a portion of the indicating figure contained in the electronic map on which the display is performed.

16. A program for executing a server control method for making a server display objects including position information on an electronic map via a network, said program making the server execute:

a step of receiving a search query via the network, obtaining conditions including a predetermined distance and designation of attribute information from the search query, and storing the obtained conditions in the server;

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including designated sorts of the attribute information within the obtained predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected

objects according to the designated attributes of the selected objects while assigning an indicating figure corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of generating search results including the objects and the indicating figure

5   on the electronic map by using the designated position coordinates.

17. The program according to Claim 16, wherein said designation step includes a step of determining the indicating figure according to the scale of the electronic map, and a step of changing display parameters for the indicating figure by using a threshold value with respect to a target attribute class, and said generation step includes a step of locating

10   the boundary of the indicating figure on the electronic map and placing on the electronic map a portion of the indicating figure contained in the electronic map on which the display is performed, and

wherein a step of receiving, from the network, objects including attribute information selectable as a search target separately from the search query, and storing the

15   received objects in the database.

18. A computer-readable storage medium on which is recorded a program for making a computer execute an information display method for displaying objects

including position information on an electronic map, said program making the computer execute:

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a set of objects by selecting the objects including a certain number of designated sorts of the attribute information within a predetermined distance;

a step of reading out an electronic map which is stored in an electronic map storage section and on which display is performed, selecting the objects contained in each of the sets by locating position coordinates in the electronic map, displaying the selected objects according to the designated attributes of the selected objects while assigning an indicating figure in an indicating form corresponding to the pair of the objects, and designating position coordinates for the objects and the indicating figure to be displayed; and

a step of placing the objects and the indicating figure on the electronic map by using the designated position coordinates,

wherein said designation step includes a step of determining, by using the predetermined distance, the size of the indicating figure as such a size that the objects to be displayed are contained inside the area defined by the indicating figure, and a step of changing display parameters for the indicating figure by using a threshold value with

5   respect to a target attribute class.

19. A computer-readable storage medium on which is recorded a program for executing a server control method for making a server display objects including position information on an electronic map via a network, said program making the server execute:

a step of receiving a search query via the network, obtaining conditions including

10   a predetermined distance and designation of attribute information from the search query, and storing the obtained conditions in the server;

a step of forming, from a database in which objects including position information and attribute information different from the position information are stored, at least a certain number of sets of objects positioned in proximity with each other and including a

15   set of objects by selecting the objects including designated sorts of the attribute information within the obtained predetermined distance;

a step of reading out an electronic map which is stored in an electronic map

storage section and on which display is performed, selecting the objects contained in each

of the sets by locating position coordinates in the electronic map, displaying the selected

objects according to the designated attributes of the selected objects while assigning an

5   indicating figure corresponding to the pair of the objects using a threshold value for a

target attribute class, and designating position coordinates for the objects and the

indicating figure to be displayed; and

a step of generating search results including the objects and the indicating figure

on the electronic map by using the designated position coordinates.

10   20. A graphical user interface system for making a computer display position

information by displaying objects including the position information on an electronic

map, said graphical user interface system comprising:

a database in which objects including position information and attribute

information different from the position information are stored;

15   an electronic map storage section in which the electronic map is stored;

a set forming section which forms at least a certain number of sets of objects

positioned in proximity with each other and including a set of objects by selecting the

objects including a certain number of designated sorts of the attribute information within

a predetermined distance;

an arrangement for reading out the electronic map which is stored in said

electronic map storage section and on which display is performed, selecting the objects

5   contained in each of the sets by locating position coordinates in the electronic map,

displaying the selected objects according to the designated attributes of the selected

objects while assigning an indicating figure corresponding to the pair of the objects using

a threshold value for a target attribute class, and designating position coordinates for the

objects and the indicating figure to be displayed; and

10   an arrangement for displaying search results including a plurality of the objects

and the indicating figure on the electronic map by using the designated position

coordinates.